III. Transportation Challenges

Understanding the past and present helps us plan for the future. The previous section presented the societal and geographic trends that generate the travel demand that the transportation system is intended to serve. This section is intended to provide a summary of the current and near term transportation system from a multi modal perspective such that we can identify future needs necessary to promote a sustainable transportation future for the AMPA region.

Past and Near-Term Transportation System

In an effort to keep pace with a growing population, the AMPA's roadway system has expanded steadily in the second half of the 20th century. Roadway analysis tools at MRCOG consist of traffic and transportation data collection, travel forecasting using sophisticated models, GIS analysis tools that integrate spatial elements with travel statistics, among others. Data from the Traffic Surveillance Program which consists of system traffic monitoring statistics going back over 15 years is used to monitor historic trends in roadway travel. Travel forecasting models are used along with forecasted socioeconomic data to predict travel demand for future scenarios. GIS based analysis tools are used to expand the realm of travel analysis to integrate modes of travel and to identify opportunities for accommodating and expanding travel options for the traveling public.

Traffic Volumes and Vehicle Miles Traveled

Monitoring traffic conditions is one of MRCOG's ongoing responsibilities. All roads classified as collectors or higher in Bernalillo, Valencia, Sandoval, Torrance and southern Santa Fe counties (see Map i-1 for area) are counted on a three-year cycle. The collected traffic data is used to support transportation planning activities, air quality and congestion analyses, and for transportation project development and design, as well as the publication of annual Traffic Flow Maps for the greater Albuquerque and outlying rural areas. The 2004 Traffic Flow Map for the greater Albuquerque area is included in the appendix of this document. In addition to traffic data collection, MRCOG maintains a regional travel demand model used to forecast growth and travel demand based on anticipated transportation network and socioeconomic information. These assumptions reflect input from member agencies as developed through their respective local planning efforts as well as through participation in the MPO collaborative planning process. Key performance measures that are monitored using the Traffic Surveillance Program and the travel demand model include system wide roadway volumes, volumes at specific locations such as at river crossings or the Big I (interchange at I-40 and I-25), vehicle miles of travel (VMT), travel times, travel delay, and volume/capacity ratios. The following tables and maps convey this information in a clear and meaningful manner and provide a snapshot of the region's traffic growth trends.

Figure III-1 shows that per capita VMT in the AMPA continues to increase over the historical trend, following a dip observed in 2000 following the Big I Reconstruction, a rise in 2003, and the 2004 VMT per capita of 22.2. Over the past 20 Years, the overall growth of average per capita VMT continues a general climb, despite interim peaks and valleys, coincidental with events such as national energy and economic forces, local major construction projects, etc.

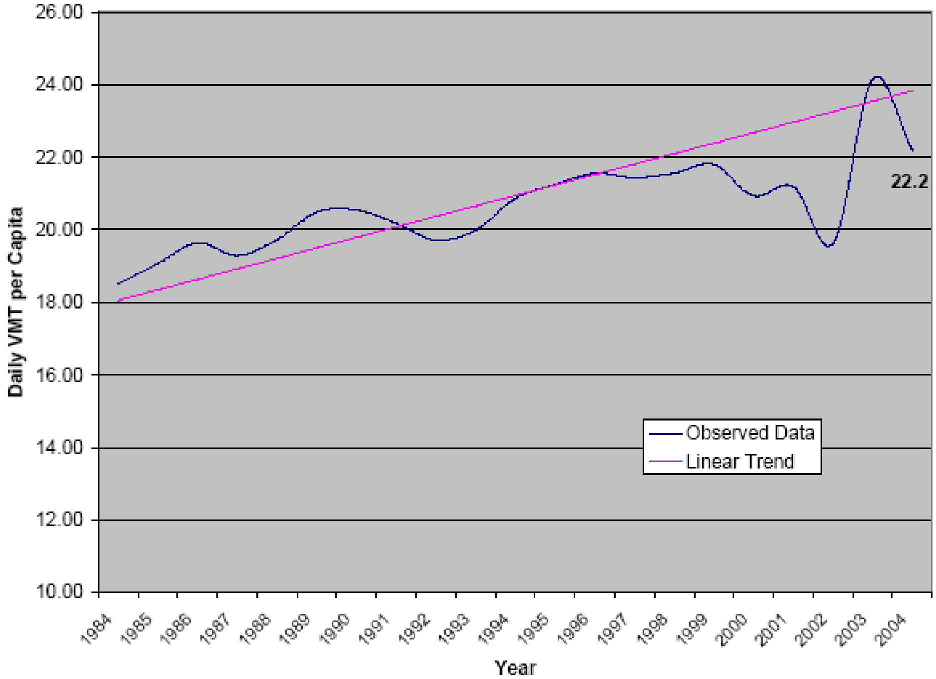


Figure III-1. Trend in Vehicle Miles Traveled (VMT) Per Capita

As can be seen in **Figure III-2**, historical growth in river crossing volumes and demand is steady. This trend is anticipated to continue into the future with Year 2015 river crossing demand anticipated to increase by nearly 30% from the 2004 Base Year condition. Similarly, Big I approach volumes are anticipated to increase over the same timeframe by approximately 15% as shown in **Figure III-3**.

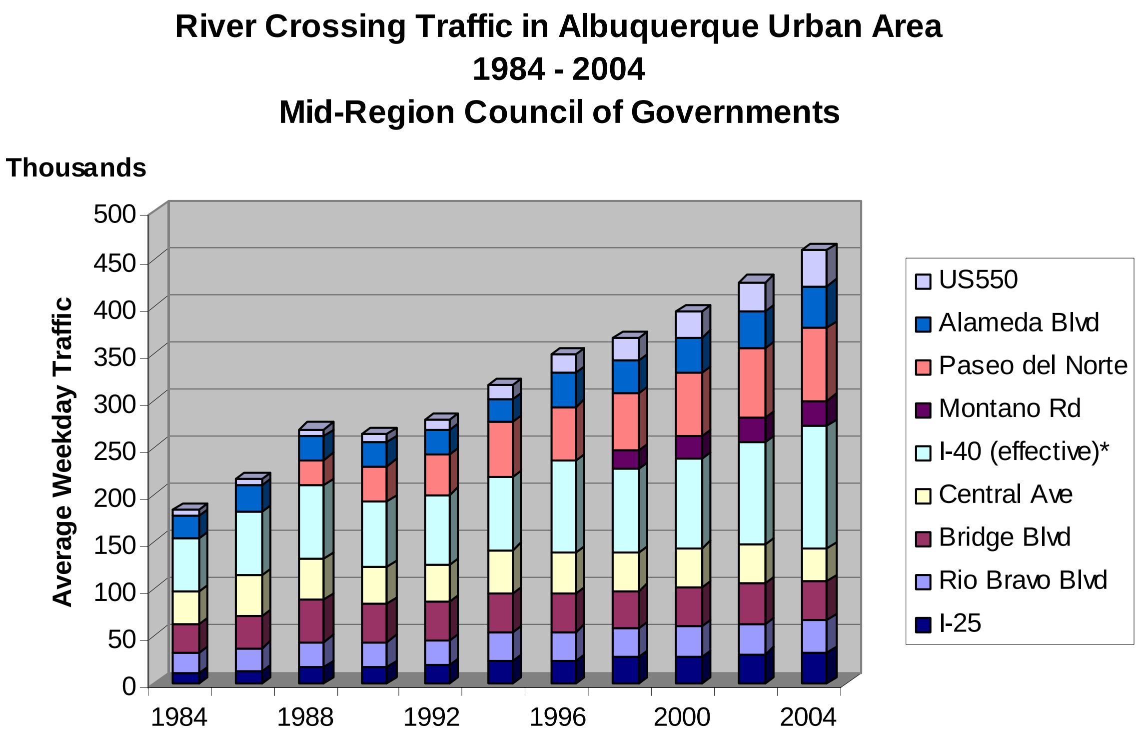


Figure III-2. Historical Growth in River Crossing Volumes

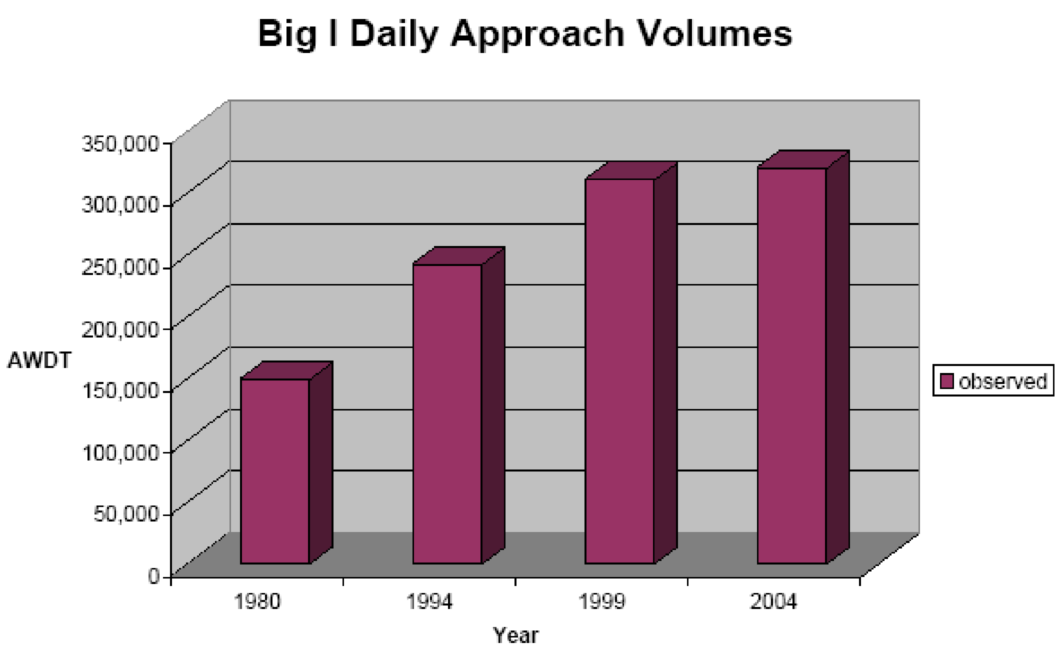


Figure III-3. Historical Growth at the Big I

The volume of travel demand (VMT) when viewed over time for any given day or peak period of travel has a typical pattern of distribution. Daily volumes will show pronounced peaks for the AM and PM periods, with a smaller rise in volumes during the mid day peak or lunchtime (see **Figure III-4)**. The AM travel period tends to be dominated with work trips, and as such, the distribution is more peaked. PM travel patterns on the other hand include more than just work trips as people perform trips such as shopping, recreation, and other non-work related activities.

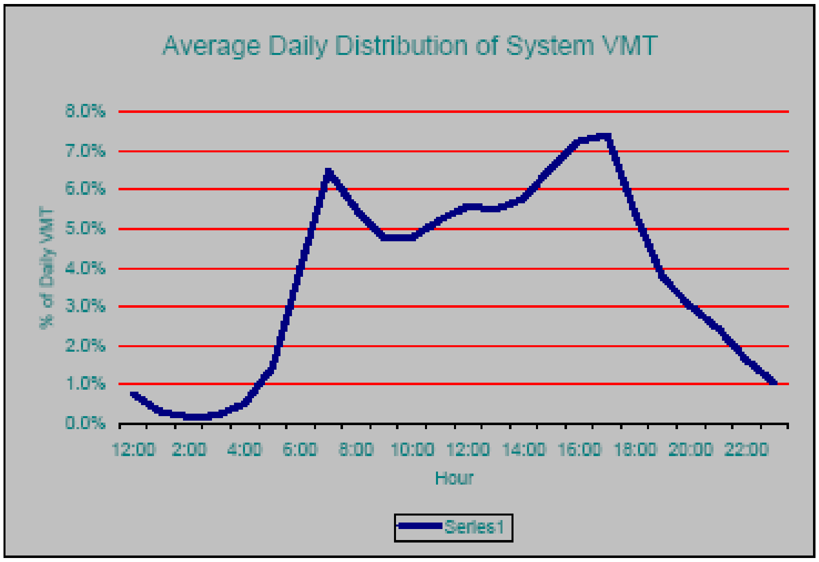


Figure III-4. Average Daily Distribution of Roadway Volumes.

Observing this data can reveal the existing and emerging temporal shifts in travel during these time periods where travel demand is highest, which can help to identify opportunities for travel demand management strategies intended to mitigate peak congestion.   As can be seen in **Figure III-5**, data from the MRCOG Traffic Surveillance Program for the PM period of travel clearly shows a "peak" with volumes tapering off on either side of that peak.

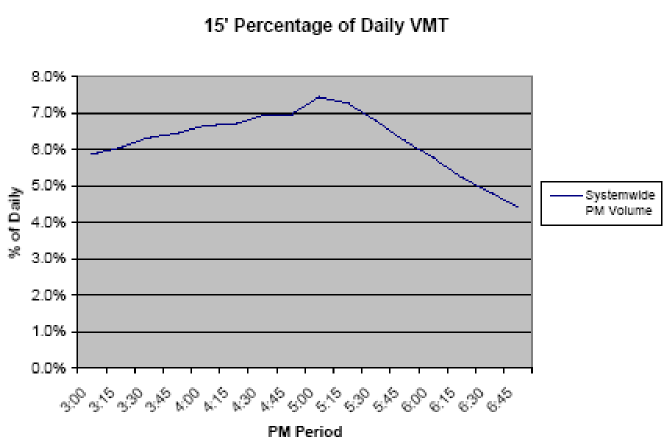


Figure III-5. PM Peak Period Distribution of Roadway Volumes, Percentage of Daily

Near term anticipated growth in traffic volumes is evaluated using the MRCOG's travel demand model. A comprehensive breakdown of VMT by roadway type for the 2004 Base Year and anticipated growth from the 2015 committed network is shown in **Table III-1.**

Modelled Congestion by Roadway Type

2004 Base Year Network, PM Peak Hour Performance | **2015 Network, PM Peak Hour Performance**

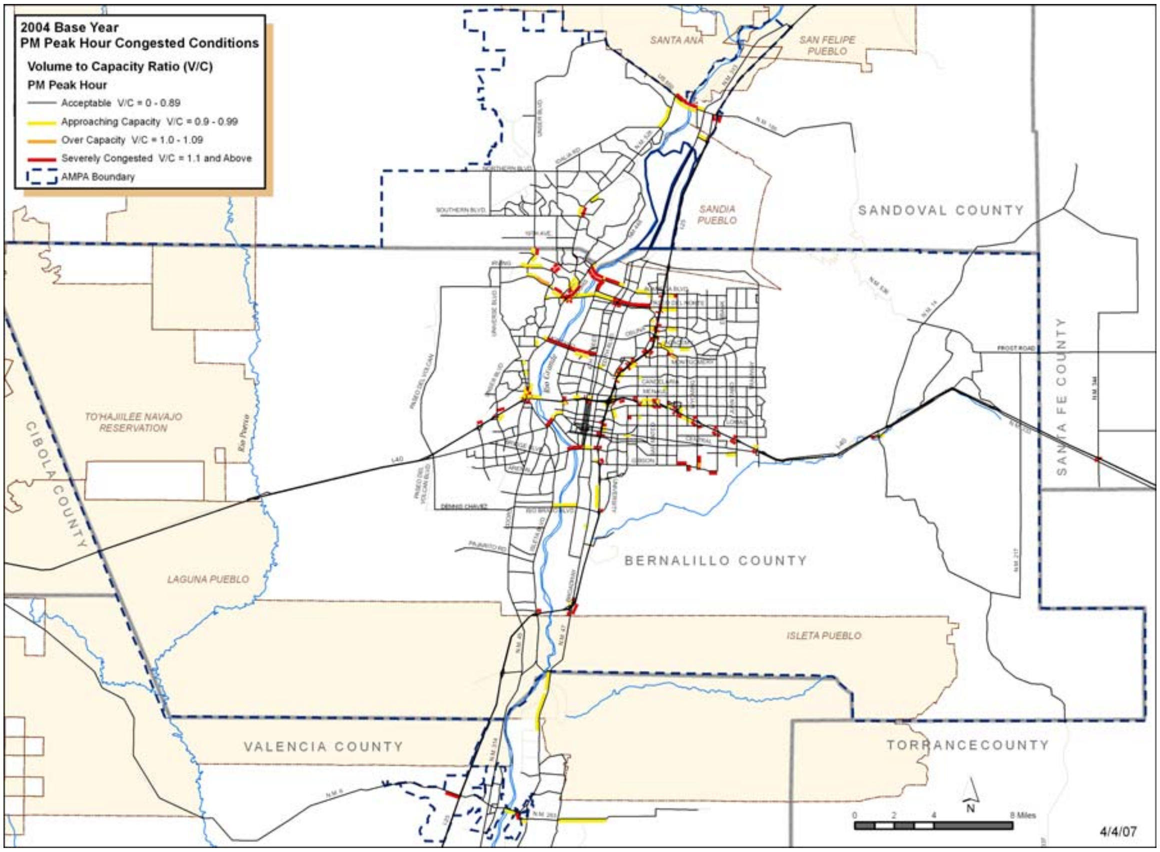
Functional Classification	Total VMT	VMT Congested^	% VMT Cong.	Functional Classification	Total VMT	VMT % Incr. over '04	VMT Congested^	% VMT Cong.	% Incr. Congestion from 04
URBAN				**URBAN**					
Principal*	507,184.3	29,981.1	**5.9%**	Principal*	683,529.1	34.8%	69,488.3	**10.2%**	**7.8%**
Minor	199,343.9	8,762.6	**4.4%**	Minor	249,848.3	25.3%	19,236.7	**7.7%**	**5.3%**
Collector	88,870.8	1,045.1	**1.2%**	Collector	113,828.4	28.1%	2,638.3	**2.3%**	**1.8%**
Frontage	18,106.5	169.1	**0.9%**	Frontage	22,735.8	25.6%	668.1	**2.9%**	**2.8%**
Freeway	394,624.0	3,789.8	**1.0%**	Freeway	482,528.3	22.3%	42,886.3	**8.9%**	**9.9%**
On Ramp	10,590.6	6,665.8	**62.9%**	On Ramp	13,526.0	27.7%	8,770.4	**64.8%**	**19.9%**
Off Ramp	10,902.4	7,910.9	**72.6%**	Off Ramp	13,775.3	26.4%	9,148.5	**66.4%**	**11.4%**
RURAL				**RURAL**					
Minor Collector	12,494.9	632.6	**5.1%**	Minor Collector	19,717.0	57.8%	786.9	**4.0%**	**1.2%**
Major Collector	51,867.9	2,044.4	**3.9%**	Major Collector	69,629.8	34.2%	12,705.5	**18.2%**	**20.6%**
Interstate Front.	151.0	0.0	**0.0%**	Interstate Front.	2,503.0	1557.6%	0.0	**0.0%**	**0.0%**
Interstate	142,321.2	0.0	**0.0%**	Interstate	199,278.7	40.0%	0.0	**0.0%**	**0.0%**
On Ramp	818.7	0.0	**0.0%**	On Ramp	1,385.8	69.3%	0.0	**0.0%**	**0.0%**
Off Ramp	1,727.6	771.2	**44.6%**	Off Ramp	2,524.7	46.1%	1,566.9	**62.1%**	**46.1%**
TOTALS	**1,439,003.8**	**61,772.6**	4.3%		**1,874,810.2**	**30.3%**	**167,895.9**	9.0%	**7.4%**

Table III-1. VMT and Congestion breakdown for 2004 and 2015 PM Peak Hour.

The data show that between the current base year of 2004 and the anticipated 2015 scenario, overall VMT is anticipated to increase by approximately 30 percent. In addition, the overall percentage of the scenario VMT under congested conditions is anticipated to increase from just over 4 percent to 9 percent. This translates to an increase in overall congested VMT of over 7% for this interim timeframe.

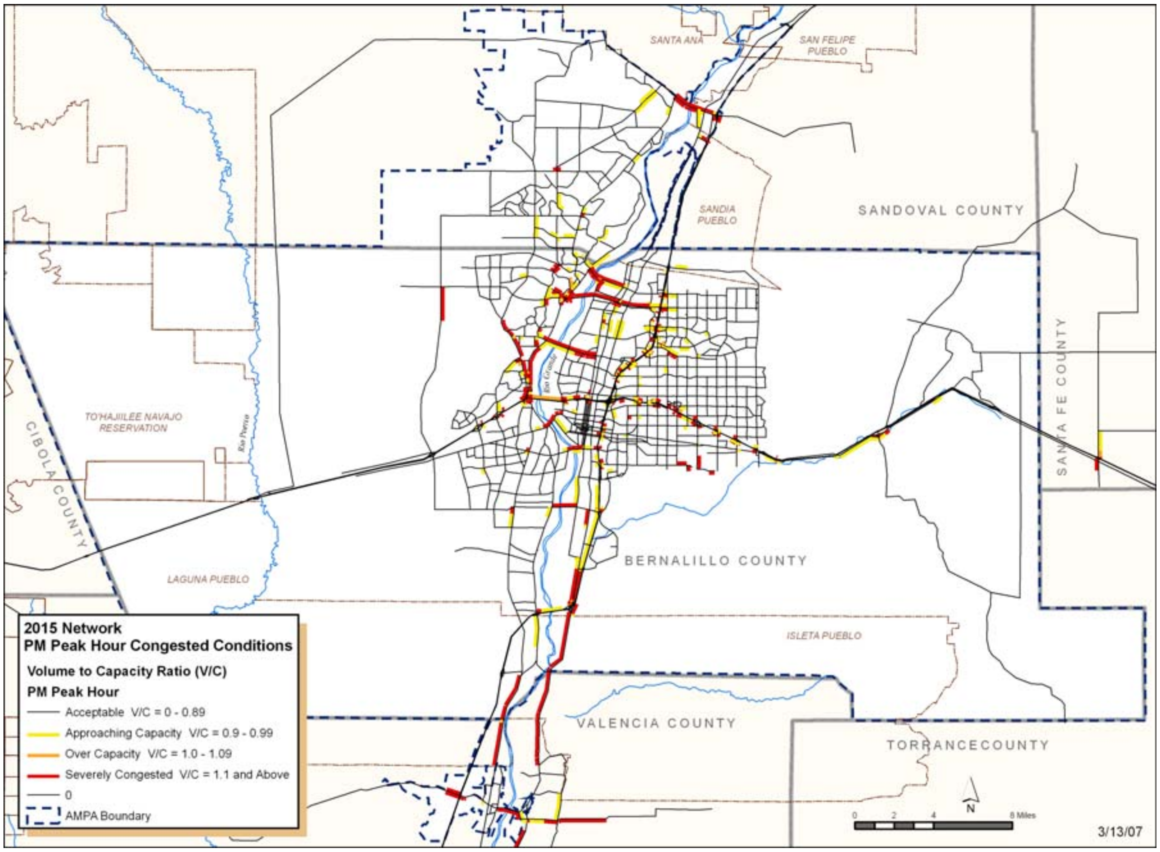
Volume to Capacity Analysis

Growth in auto-related travel has been steady within the AMPA, and as such, numerous roadways capacity problems have emerged associated with increases in roadway congestion. The time period for analysis contained in the MTP is the PM Peak Period which includes major travel such as commute trips and other trip types, ie, shopping, etc. **Map III-1** shows the regional transportation network with volume to capacity ratios for the 2004 MTP Base Year condition. The volume to capacity ratio is a measure of the auto volumes for the peak hour, in this case, the PM timeframe, relative to the roadway capacity for that hour and provides an easily discernable measure of auto travel demand relative to the available capacity that the roadway network can provide. Where demand exceeds capacity, congestion ensues and the operations of the network degenerate resulting in reduced mobility and increased delay. Roadway segments depicted in grey show segments that are at acceptable levels of operational capacity. Those shown in red, maroon, and black, however indicate road segments that are approaching capacity, are over capacity, or are severely congested.



Map III-1. 2004 Base Year PM Pk Hour Volume to Capacity Ratios

This map clearly shows key areas of roadway congestion including river crossings, portions of the freeway system, corridors connecting areas of significant (residential) growth, as well as areas with limited roadway infrastructure such as portions of the West Side. The same analysis is performed on the 2015 Scenario, which represents the "committed" roadway network which includes near term projects already included in the TIP and MTP and is shown in **Map III-2**. It is interesting to note that very similar patterns of roadway congestion exist between the two growth scenarios; however, one major difference is with increased severity and geographic extent of congestion. Another interesting observation is that key corridors such as the river crossings, the north/south connection at the southern portion of the AMPA along the Bernalillo/Valencia County and Isleta Indian Reservation boundary emerge with severely congested auto travel conditions despite "committed" roadway expansions projects assumed in the 2015 network. It is evident that the commuting travel behavior and travel patterns associated with the anticipated growth discussed earlier in this document present a daunting challenge to future mobility; the reliance on the provision of expanded roadway capacity simply does not keep up with anticipated socioeconomic growth.



Map III-2. 2015 PM Pk Hour Volume to Capacity Ratios

Travel Time, Speed, and Stop Delay

In addition to roadway volume data, MRCOG collects auto travel speed and time data for all periods of the day including the AM, Off Peak, and the PM timeframes. These data are collected in support of several programs at MRCOG including our Congestion Management Process (CMP), the Traffic Surveillance Program, Air Quality Monitoring, and the Travel Demand Modeling Environment.

Travel Time Contour Analysis

Another approach for assessing transportation system performance involves focusing on travel associated with key PM period traffic generators such as large employment areas. The PM Period of travel is typically the focus of transportation analysis as it tends to involve the highest amount and diversity of travel and includes critical commute trips and trips associated with home-based travel. The quality of roadway operations during the PM Peak is an excellent indicator of the overall operations of the transportation system. As such, travel delay and other associated problems due to recurring (demand exceeding capacity) and non-recurring (roadway incident related) congestion seem most apparent to the traveling public.

Analysis for the MTP scenarios involved focus on key commute patterns associated with 3 major employment centers within AMPA. The approach involves “select zone” travel market analysis using travel pattern information from the travel demand model along with travel time and market analysis of the trip data using the TRAM multimodal accessibility analysis tool. This

GIS-based environment provides a platform that combines computer based analysis tools with available socioeconomic datasets in a spatial context allowing full utilization of the modeling capabilities at MRCOG, ie, the travel demand travel forecasting model with the Arcview extension *m2probe*, the Arcview based Transportation Accessibility Model (TRAM), and GIS socioeconomic datasets. In this manner, major commute patterns for three areas of high anticipated growth were selected to evaluate changes in travel time and accessibility over time. The 3 areas of high residential growth include:

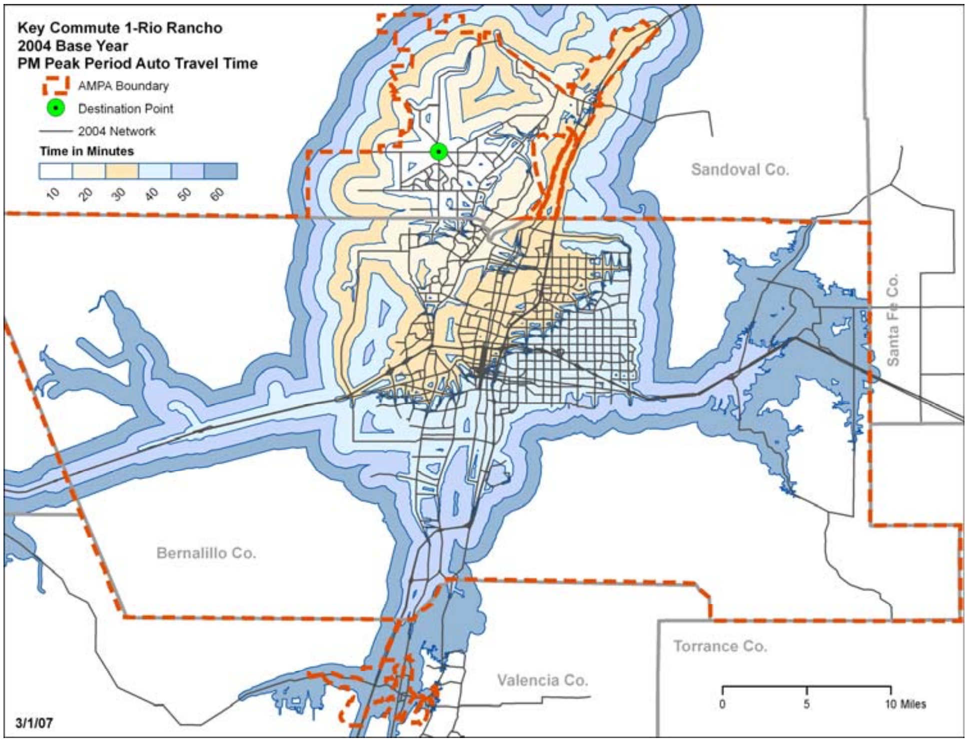
1. the Northwest area (represented by the intersection of Unser Blvd and Northern Blvd)
2. the Southwest Mesa (represented by the intersection of Unser Blvd and Dennis Chavez Blvd)
3. the Southern portion of the AMPA (represented by the interchange at NM 6 and I 25).

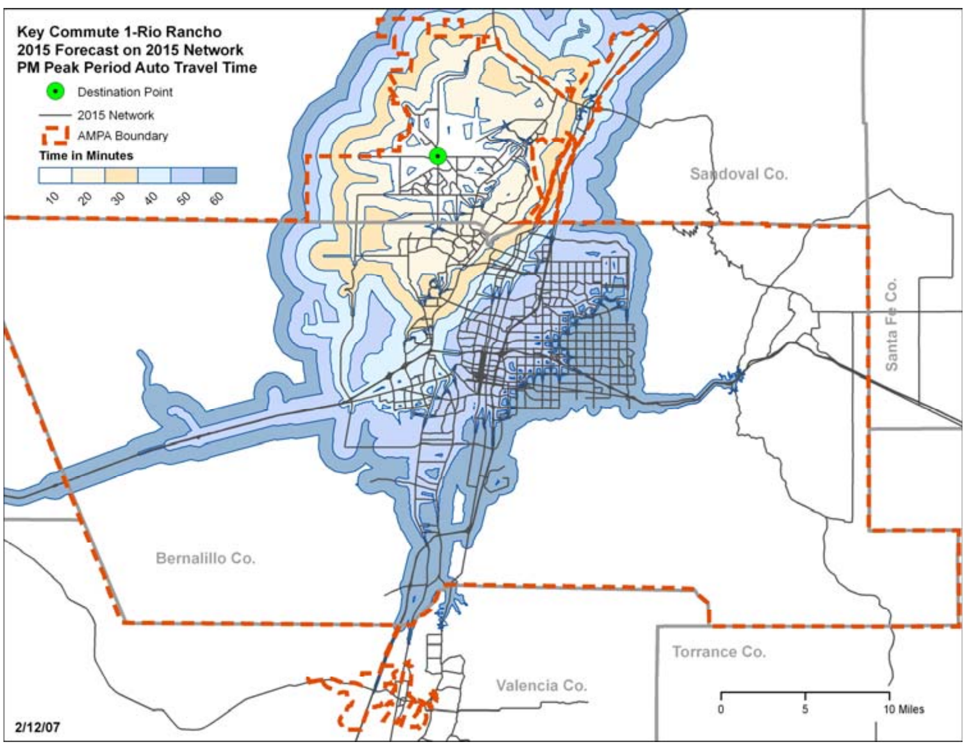
The 3 employment centers of focus include:

1. Journal Center (2004 employment = 38,728; 2030 anticipated = 47,172)
2. KAFB/Sandia/Lovelace (2004 employment = 30,614; 2030 anticipated = 29,450)
3. CBD (2004 employment = 22,308; 2030 anticipated = 23,399)

Auto based Origin/Destination travel data was extracted from the travel forecasting model for each sub-area/select zone, and those underlying trip ends were identified by 10' intervals of congested auto travel time "contours" extending outward from the major employment center. The range of travel contours was limited to 60' (1 hour) as a reasonable "upper end" of travel time.

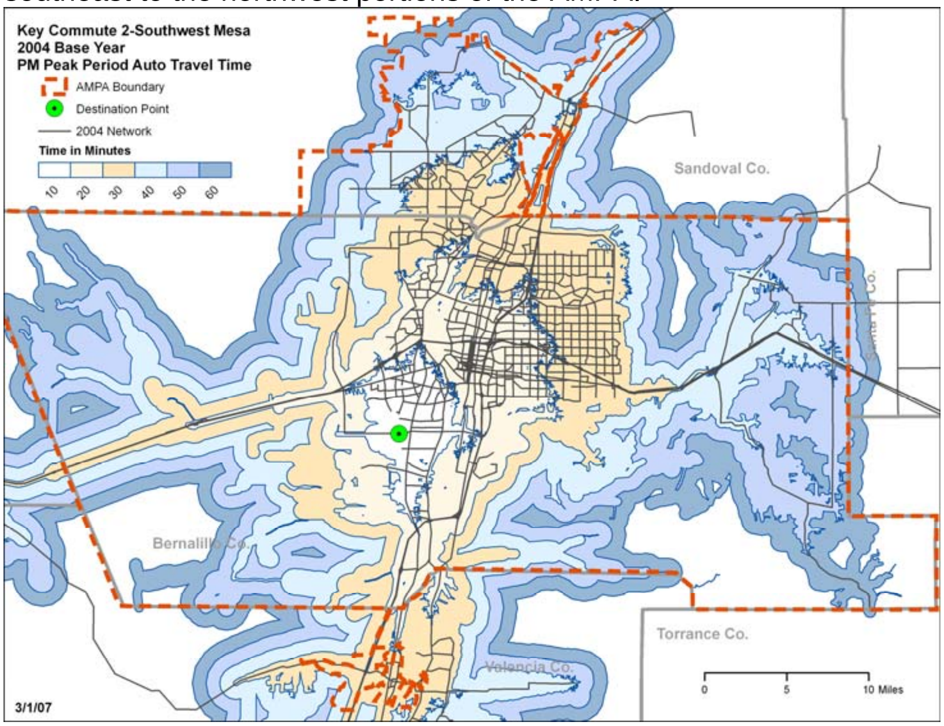
The travel time contour maps for the 2004 Base Year and 2015 scenarios are shown in **Maps III-3, III-4**, and **III-5.** The data demonstrate that auto travel times are anticipated to increase substantially for these key commutes. Key indicators to look for on these maps are where the time contours tend to "compress" or narrow, indicating areas where the travel speed slows down. As travel speed is a function of distance over time, as time increases and travel is slowed, less distance is transversed respective to each time interval and the contours appear smaller in width. Specific point to point travel time by the MTP growth scenarios are summarized in the technical appendix of this document.

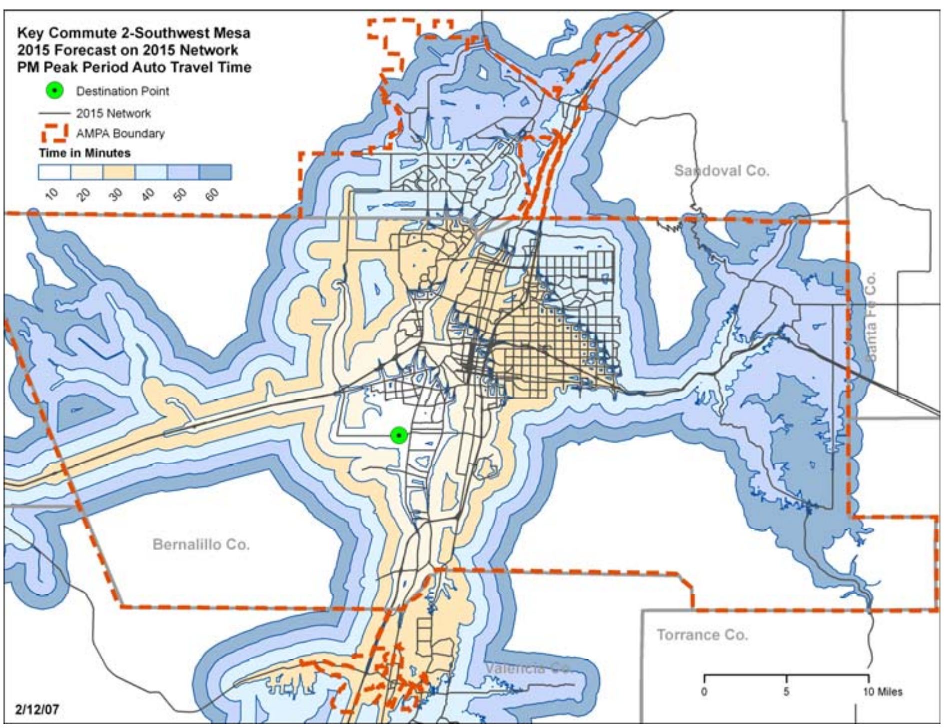




Map III-3. Change in PM Peak Travel Time Contours for Destination point in Rio Rancho, 2004 and 2015 Scenarios.

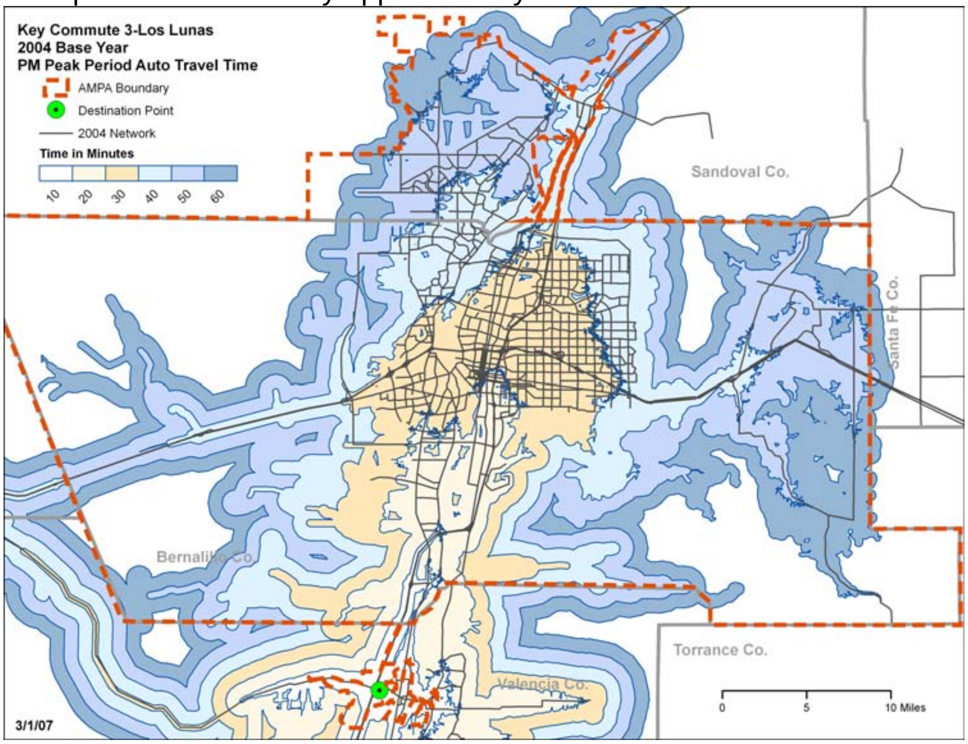
Travel times to Rio Rancho as shown in Figure III-2 are expected to dramatically increase in the 2015 Scenario. Anticipated increases in commute time under the 2015 Scenario show that travel times to Rio Rancho (Commute 1) from the CBD are anticipated to increase approximately 24% from the Base Year conditions. Most noteworthy are the effects of limited capacity of the river crossings for the very large commute travel pattern exhibited from the southeast to the northwest portions of the AMPA.

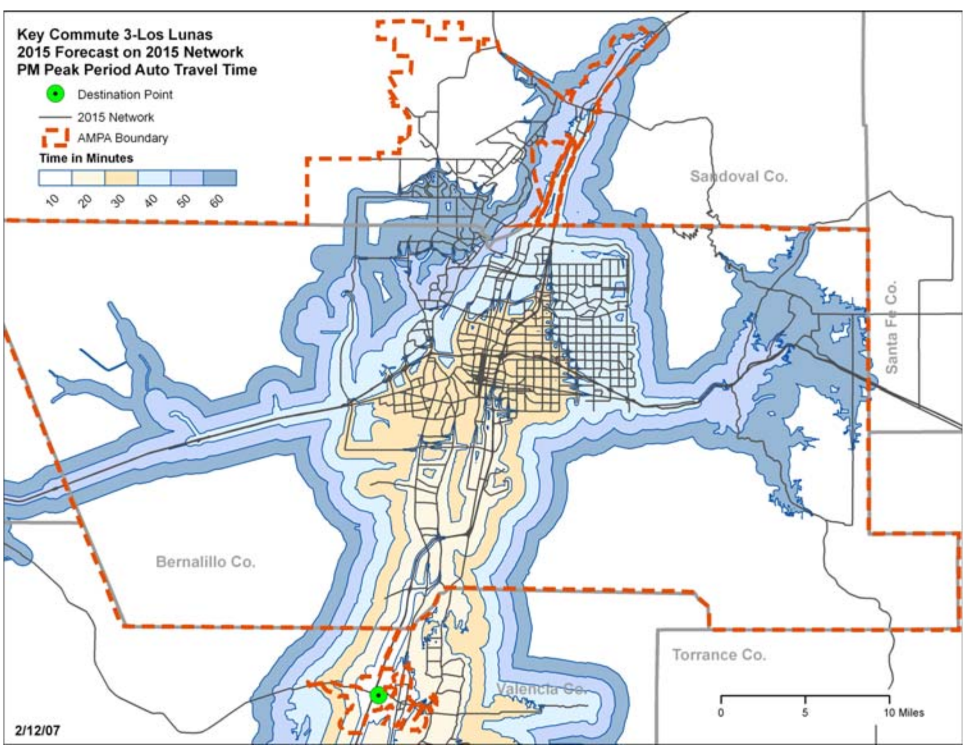




Map III-4. Change in PM Peak Travel Time Contours for Destination point in Southwest Mesa, 2004 and 2015 Scenarios.

The Southwest portion of the AMPA is showing increases in travel time for the 2015 Scenario, most apparent in observing the shift in the 30' contour. Although the increased times for this commute are not as severe as those for Commute 1, average travel times from the CBD are anticipated to increase by approximately 20%.



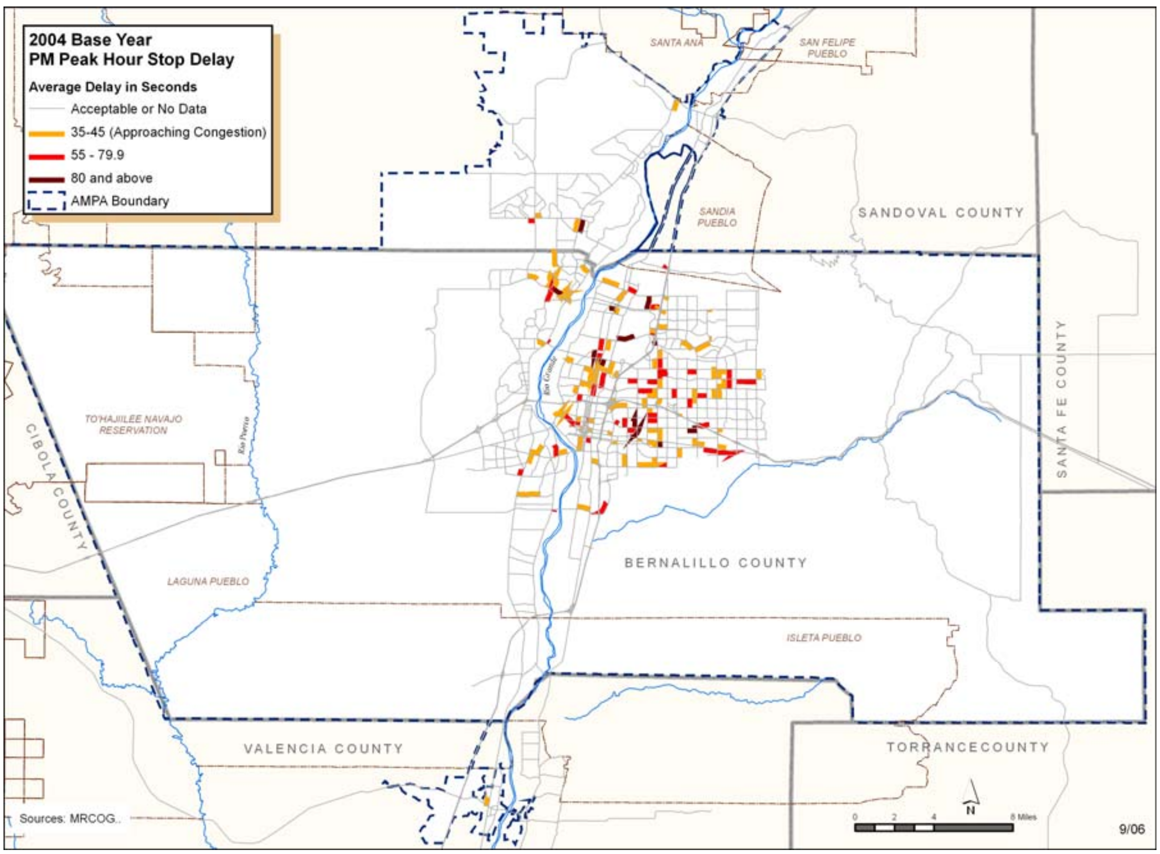


Map III-5. Change in PM Peak Travel Time Contours for Destination point in Los Lunas, 2004 and 2015 Scenarios.

The southernmost portion of the AMPA, Los Lunas, is anticipated to experience increased auto travel times with a similarly drastic shift as noted in observing the 30' contour with an average increase in commute time form the CBD of 62%.

Stop delay

In addition to speed and travel time data, MRCOG's Travel Surveillance Program includes the acquisition of link level average stop delay. Stop delay is a revealing measure of roadway conditions as it measures the utmost congested condition whereby the traveler is actually stopped. Typically, stopped conditions are common at areas with signalized or stop-controlled intersections and/or poor signal timing; however, stop delay is not always associated with roadway intersections. It is often the case that stopped delay is experienced mid-block caused by poor roadway geometry or simply too much travel demand on the roadway segment. **Map III-6** shows the system wide network stop delay for the PM Peak Hour of travel, 2004 Base Year conditions.



Map III-6. 2004 Base Year PM Pk Hour Average Stop Delay.

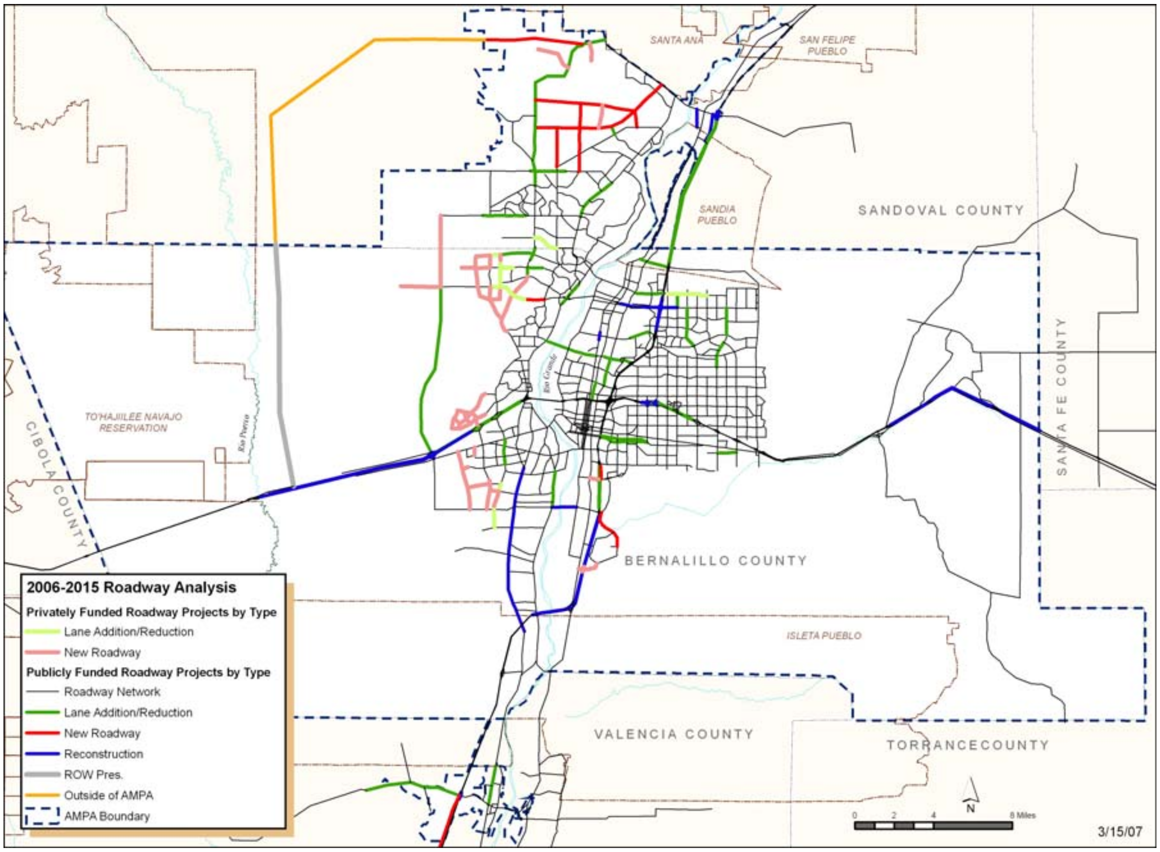
Roadway Lane Mileage Included in the 2030 MTP

Roadway mileage for the AMPA as represented in the travel demand model for the MTP analysis years of 2004 and 2015 is summarized in **Table III-2** and **Map III-7** below. Roadway mileage includes new facilities as well as roadway widenings and/or modifications and is consistent with projects included in the 2008-2013 TIP and MTP 2015 network scenarios. Note that some roadway classification changes may be a result of future classification adjustments based on roadway function and volume and may or may not be associated with roadway projects.

Roadway Type	2004 Lane Miles	2015 Lane Miles	Difference	% Difference
URBAN:				
Principal Arterial/LAPA*	1106.3	1320.5	214.2	19.4%
Minor Arterial	600.2	682.1	81.9	13.6%
Collector	459.3	507.1	47.8	10.4%
Interstate Frontage	53.0	56.9	3.9	7.4%
Interstate	315.4	351.7	36.3	11.5%
On ramp	18.8	23.7	4.9	25.9%
Off Ramp	18.2	22.8	4.6	25.4%
RURAL:				
Major Collector	185.9	102.4	0.8	0.8%
Minor Collector	101.6	185.9	0.0	0.0%
Interstate Frontage	2.7	20.1	17.4	644.4%
Interstate	210.1	212.4	2.3	1.1%
On ramp	4.1	4.8	0.7	17.1%
Off Ramp	4.9	5.0	0.1	2.0%
Totals	**3080.5**	**3495.4**	**414.9**	**13.5%**

Notes: "*" refers to Limited Access Principal Arterial (LAPA)

Table III-2. Roadway Lane-Miles Programmed in the 2030 MTP



Map III-7. Roadway projects included in the 2015 modeled Roadway Network.

Pavement Management Systems within the AMPA

Guidance included in *23 Code of Federal Regulations for Metropolitan Transportation Planning* specifies elements that must be included in the metropolitan transportation planning process to ensure that project programming is geared toward an efficient and well maintained transportation system. Specific reference is made to the need for preservation of the existing system as well as the use of life-cycle costs in the design and engineering of all roadway infrastructure elements.

Nationally, nearly 1/3 of all roadways in America are in poor to mediocre condition *(Report Card on America's Infrastructure, ASCE 2003)* resulting in increased occurrences of, congestion, and delay. A common approach undertaken by MRCOG member agencies with roadway infrastructure responsibilities has been the establishment of Pavement Management Systems. These programs have typically been established within the public works departments and often include a set of tools and/or monitoring mechanisms that assist decision makers in finding cost-effective strategies for ensuring that the roadway system is maintained in a safe and serviceable condition. Monitoring of pavement condition is critical so that timely maintenance treatments can be deployed to avoid the typical roadway degeneration. A pavement life-cycle curve is shown in **Figure III-6**.

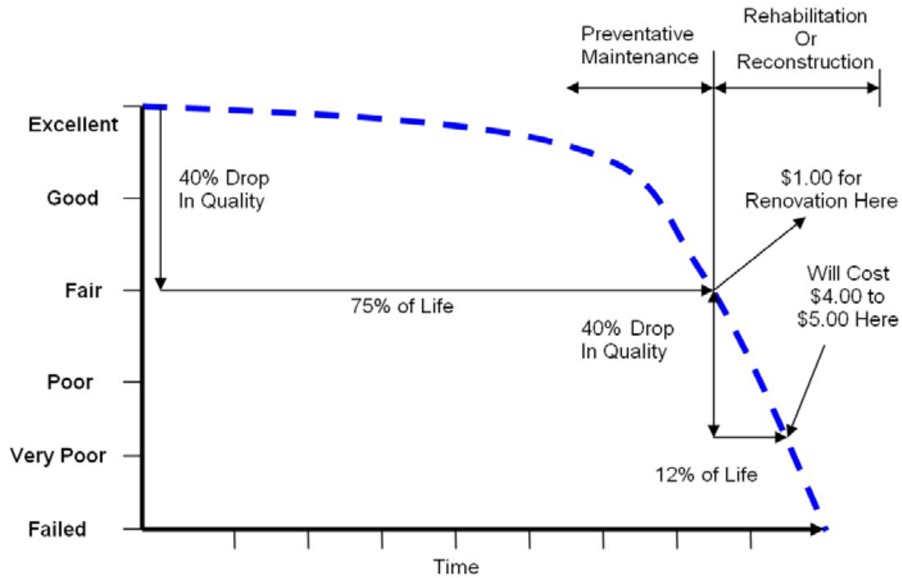


Figure III-6. Typical pavement preservation curve with relation between timely maintenance and optimal roadway preservation.

Agency:	Centerline Mileage Paved	% Fair and Above	Centerline Mileage Gravel or Dirt
Bernalillo County	513	85%	203
City of Albuquerque	4,111	86%	n/a
City of Rio Rancho	294	90%	610
NMDOT, District 3	140 Interstate/470 Non Interstate	82%	n/a

Table III-3. Centerline Mileage Breakdown by Agency and Condition

In response to ongoing roadway infrastructure maintenance needs within the AMPA, approximately 56% of all federal funding dedicated for system Operations and Maintenance (O & M). Summarized in terms of roadway network, highway system preservation represents 69% of the roadway lane mileage affected in the MTP. A summary of AMPA roadway mileage by agency and condition is shown in **Table III-3.**

Congestion Management Process (CMP)

Federal regulations require TMAs to develop and implement a Congestion Management Process - CMP (23 CFR 450.320 and 23 CFR 500). A CMP is a process that integrates into the regional transportation system to address congestion. The goal is to have a process that analyzes the performance of the transportation system and help to identify strategies to address the congestion problem, evaluate the effectiveness and efficiency of those strategies and provide such information to policy makers and the general public.

The Mid-Region Council of Governments is in the process of evaluating and enhancing its CMP program to better serve its regional purpose. This revision is aimed to integrate the CMP program into the Albuquerque metropolitan planning process. Several steps have been taken and will be implemented in the near future. These steps include but are not limited to:

- Revision of the definition of congestion. This step is critical for the monitoring of the transportation system and the definition of the CMP network.
- Revision of the data collection process to streamline the flow of information and better integrate other sources of data collection. This step is important for strategy performance evaluation.
- Evaluation of the efficiency and effectiveness of implemented strategies.
- Definition and implementation of a CMP schedule, which includes strategy implementation, agency responsibilities, strategy evaluation, and possible funding sources.
- Information dissemination of CMP program products.
- Development and incorporation of a comprehensive CMP section/element in new TIP and MTP project proposal forms.
- Creation of a regional CMP group or committee which will oversee the CMP program performance and products. The group will meet in anticipation of TIP and MTP development to issue recommendations regarding transportation system performance findings and strategy considerations to the policy board.

In developing the 2030 MTP- system performance analysis - the Albuquerque MPO used its current congestion definition indicators. These indicators include the volume to capacity (V/C) and travel delay analysis. The V/C indicator is based on the most recent traffic counts available for each roadway segment. Map III-1 and Map III-2 above show the V/C information for the 2004 base year and 2015 intermediate year for the PM peak hour. A similar analysis is performed for the future 2030 scenario and is included in the *Roadways element, Section V*.

Travel time is the other indicator used in the development of the 2030 MTP. Several analytical tools have been used for the assessment. These tools include the travel forecasting model (EMME/2), the transportation accessibility model (TRAM), the Land Use Allocation Model (LAM), and the traffic monitoring system database.

These tools helped to build travel time patterns by peak period or hour, origin and destination analysis, build travel time contours, identify potential travel markets through the AMPA, assess the comparative competitiveness of different modes of transportation or any combination of them, and evaluate alternative strategies such as HOV lanes and/or manage lanes at specific corridors (i.e manage lanes along Paseo del Norte between Coors Blvd. and I-25). This analysis is integrated in the 2030 MTP through its different chapters and sections.

The Section III analysis indicates that the following alignments or “corridors” in the transportation system present congestion problems:

- US 550 from NM 528 to I-25
- Alameda Blvd. from Corrales Rd. to 2nd St.
- Paseo del Norte from Golf Course to I-25
- Montano from Golf Course/Taylor Ranch to 4th or 2nd St.
- Cesar Chavez from Isleta Blvd. to I-25
- I-25 from Sunport to Broadway Blvd.
- NM 6 from NM314 to Ever Rd.
- Several ramps in the I40 and I25 urban sections

All the 2030 MTP analysis has resulted in several projects and programs to address the performance of the AMPA transportation system. Some of the projects, programs and studies that have been proposed in the 2030 MTP include new transit facilities, rolling stock, and routes for the region, ITS technology and TSM- incident management AMPA wide, categorical funding for safe bicycle and pedestrian projects, studies, additional commuter rail stations and connections, to only mention some.

Some of these proposed projects and programs are located in alignments having congestion problems as the ones mentioned before, such as:

	Sample congested areas and proposed strategies		
Facility	**Termini**	**Strategy**	**Sponsors**
US550	From NM528 to I-25	• Bicycle Lanes. • Two transit deviated fixed route services (Jemez Spring and Cochiti Lake. • A transit route to Cuba. • Transit facilities at: US550/I-25, Sandoval County Judiciary Complex and other locations. • Sandoval county Demand response bus service.	Town of Bernalillo; NMDOT, Sandoval County
Alameda Blvd.	From Corrales Rd. to 2nd St.	• Bicycle trail and lanes.	Bernalillo County
Paseo del Norte	From Golf Course to I-25	• Additional bicycle facilities to increase connectivity to employment centers. • Study the concept of HOV lanes and or manage lanes.	NMDOT, City of Albuquerque
Montano Rd.	Taylor Ranch to 2nd St.	• New commuter rail station. • Bicycle facilities to increase connectivity and accessibility of destinations.	NMDOT, MRCOG, City of Albuquerque
NM 6	From NM314 to Ever Rd.	• Transit operation and administration. • Rail runner shuttle service – two fixed routes. • A JARC – Job Access and Reverse Commute service. • A “United We Ride Service” to eligible disadvantage persons.	Village of Los Lunas, NMDOT

Activity Center Analysis

The Activity Center Analysis intends associate travel patterns with markets captured by mode of transportation or a combination of them (walk to transit). The analysis focused on the top five centers representing the highest concentrations of employment in the AMPA. The five activity centers are: Kirkland Air Force Base (KAFB), I-25/Jefferson Corridor, Downtown Albuquerque/St. Joseph Hospital area, Albuquerque Mid-town, and UNM/Presbyterian Hospital area. The analysis is based on the anticipated 2030 socioeconomic dataset with the 2015 transportation system.

A zone analysis was done for each of the activity centers to determine the Origin/ Destination (O/D) information associated with each of them. The six contour intervals of ten minutes by mode of transportation were then related to the O/D information to determine how much of the market was captured. The analysis provided an approximation of the potential competitiveness of each transportation mode to the target market.

Table III-4 at the end of this section summarizes the O/D analysis by mode of transportation for each of the five activity centers. Data shown include the cumulative PM peak period number of trips captured by each travel time interval and the cumulative interval share of the market demand (percentage of the total trips associated with each of the employment center zone analysis). The cumulative interval share does not add to 100% because trips are out of the contour area as can be seen from the graphics provided as an example. This information is shown graphically in **Maps III-8** through **III-15** for the I-25/Jefferson activity center only, however, similar graphics were generated for each of the activity centers.

Understanding the market associated with each activity center will help planning strategies to expand the competitiveness of specific modes based on projects or programs. Examples could include closing gaps in the bikeway system (expand the off-road bikeway system) or introduce new strategies such as HOV lanes and/or manage lanes in the future. The following set of maps show the travel time contour by mode of transportation for the Jefferson/I-25 activity center as an example of the analysis done for each of them.

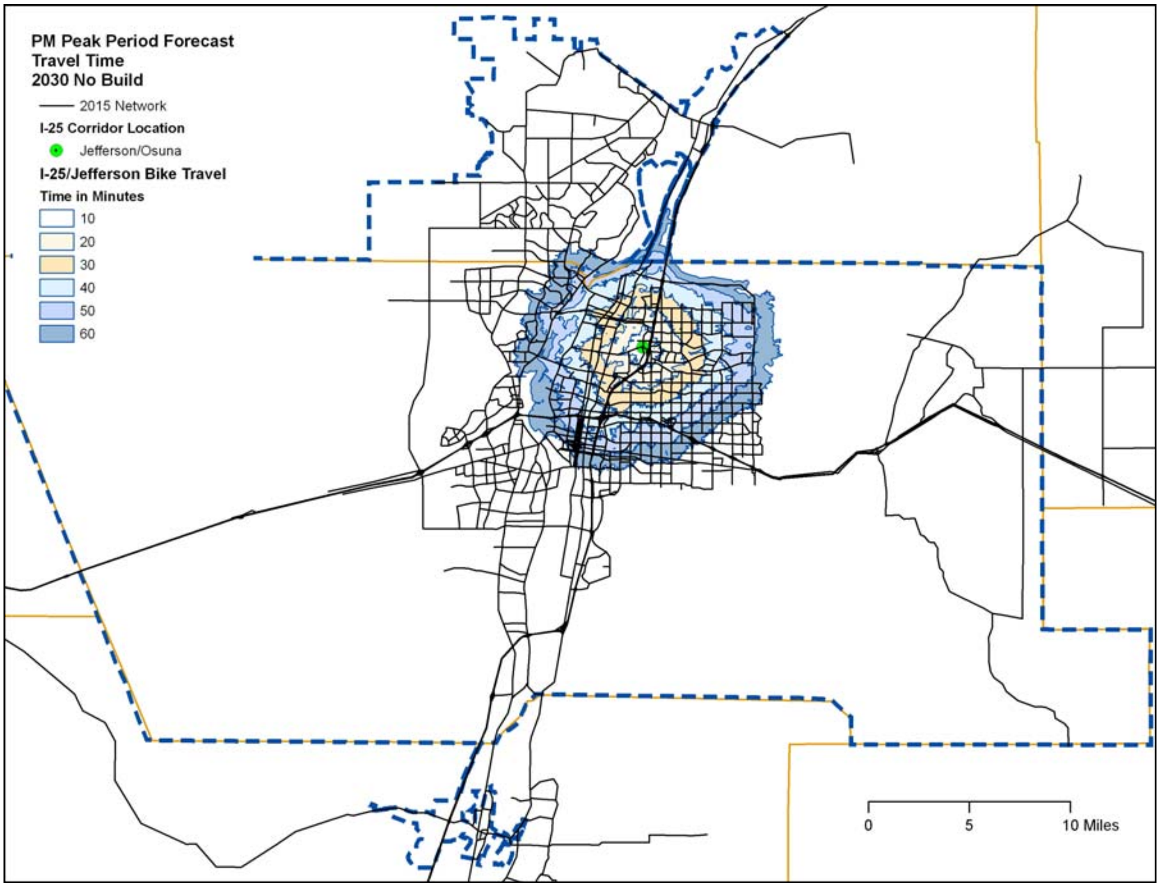
Two maps are paired to display the travel time contour and then the travel time contours are overlaid with the O/D information. Each dot represents 20 trips. The green dot identifies the location used by TRAM to build the travel contours. It is important that the information (Maps and the summary table) be study together.

It is important to remember that this is an analysis based on the best information available and the current modeling capabilities at MRCOG.

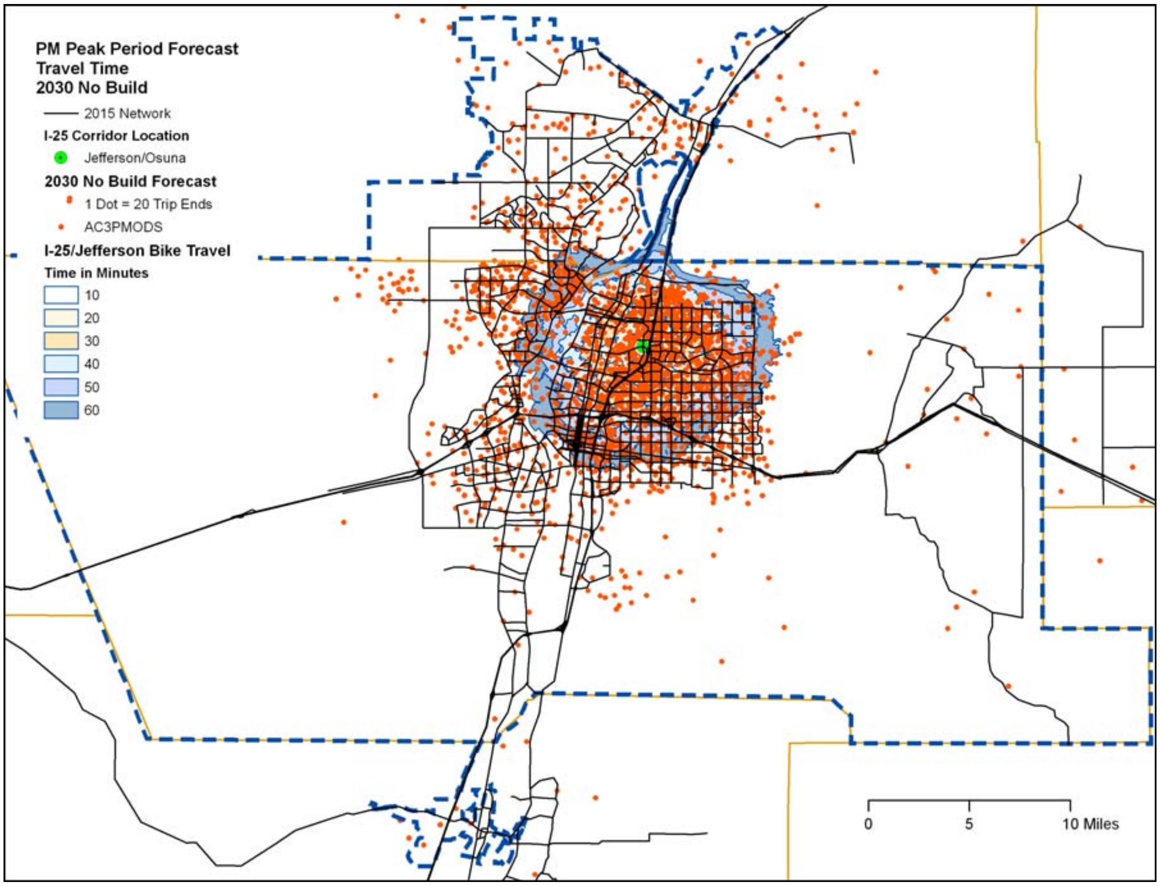
Travel time contour summary for the I-25/Jefferson activity center:

Bicycle Mode (**Maps III-8** and **III-9** below):

- Most of the north east portion of the Albuquerque area can be reached in less than 60 minutes compared with a more limited area west of the Rio Grande. There are limited options for cyclist to cross to and from the Westside of the river.
- The off-street bikeway network in the study area presents gaps for cyclist to reach destination in a continuous way. Map 3 in the Bicycle Element show how the existing trail network relate to the activity centers.
- The intersection of Corrales Rd. and Alameda Blvd. can be reached in approximately 50 minutes from the start location of Osuna and Jefferson Blvd. This could be considered a relative competitive performance in relation to the auto travel time because of the auto congestion present in the Alameda Blvd. corridor. The potential for increase the competitiveness of the bicycle travel is great if a more continuous bikeway network is provided in the area.
- UNM campus can e reached in approximately 50 minutes. The North Diversion Channel trail is a critical connection for this finding.



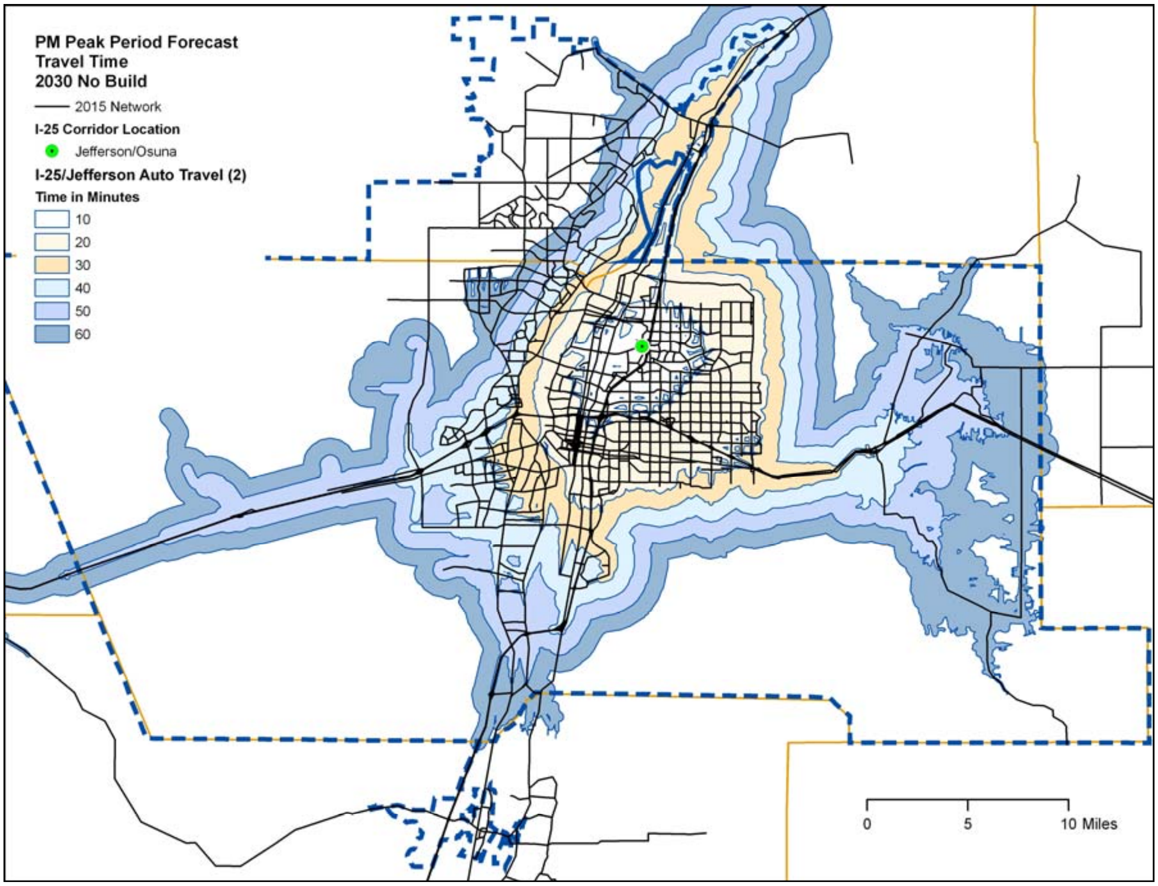
Map III-8 – Bicycle travel time contours for I-25/Jefferson Activity Center.



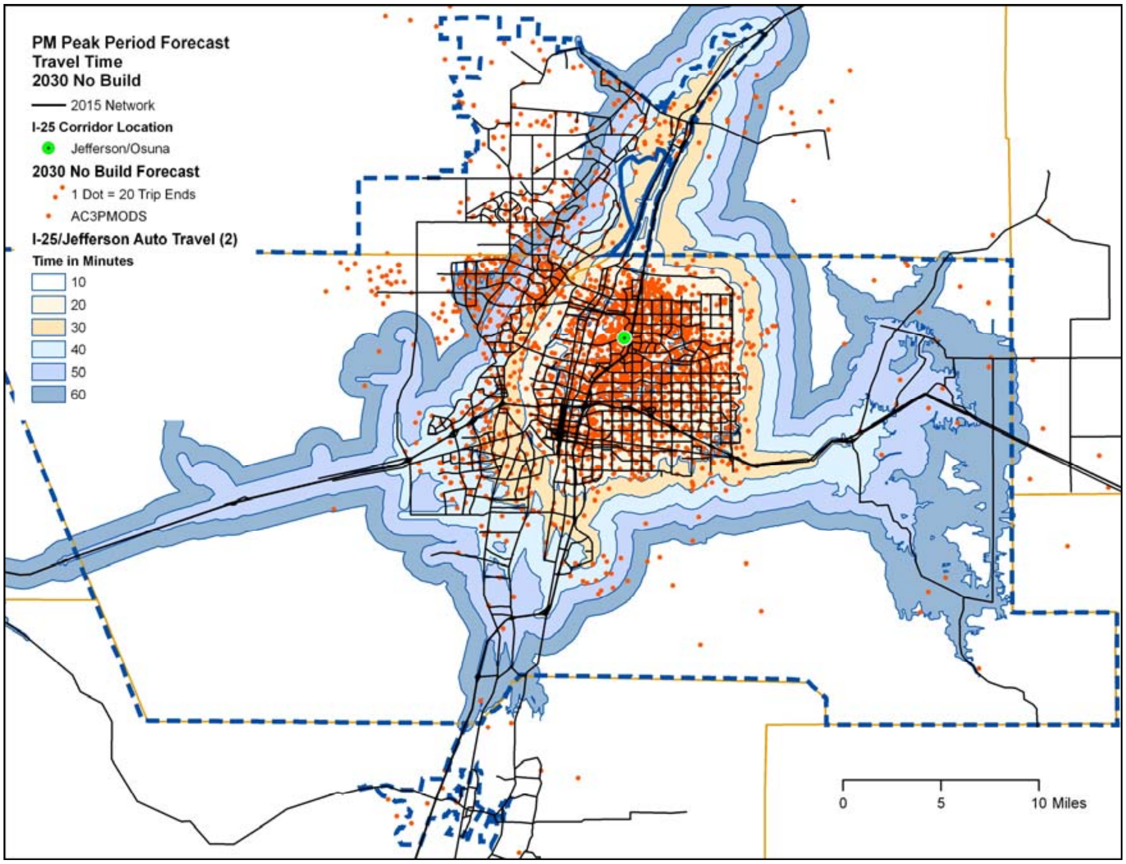
Map III-9 – Bicycle travel time contours with Origin and Destination (O/D) data for I-25/Jefferson Activity Center.

Auto Mode (**Maps III-10** and **III-11** below):

- The travel time contours expand to a greater degree on the east portion of the Albuquerque area than on the Westside. Limited river crossings in relation to the demand overwhelm the capacity of the existing infrastructure to connect to and from the Westside. Alternative strategies would increase the capacity to manage the existing infrastructure with more transit capacity, manage lanes, bicycle alternatives, and ITS technology to mention only some.
- The level of congestion experienced on the river crossing on alameda Blvd., Paseo del Volcan, and Montano Rd. affect how much of the travel time contours expand to the Westside of Albuquerque and to the City of Rio Rancho. The grid street pattern on the east side of I-25 offer more alternative to traveler with resulted in a broader area to be reached in shorter travel times.
- The interchange of US550 and I-25 can be reach in less than 40 minutes while other location such as NM528 and Southern Blvd. in the City of Rio Rancho, Unser Blvd. and Paseo del Norte can be reached in a little more than 60 minutes. The river crossings act as bottlenecks to the traffic flow.
- It takes almost 40 minutes to reach the intersection of Corrales Rd. and Alameda Blvd.



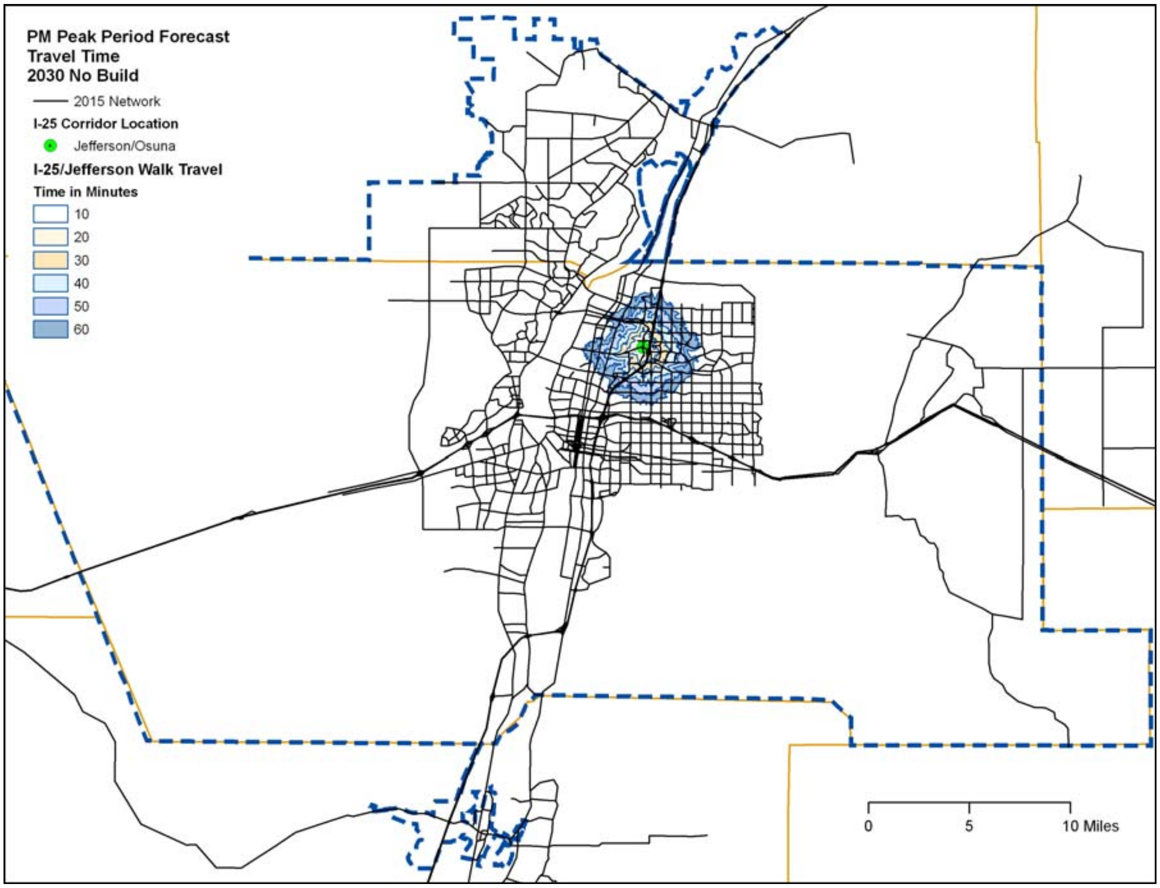
Map III-10 – Auto travel time contours for I-25/Jefferson Activity Center.



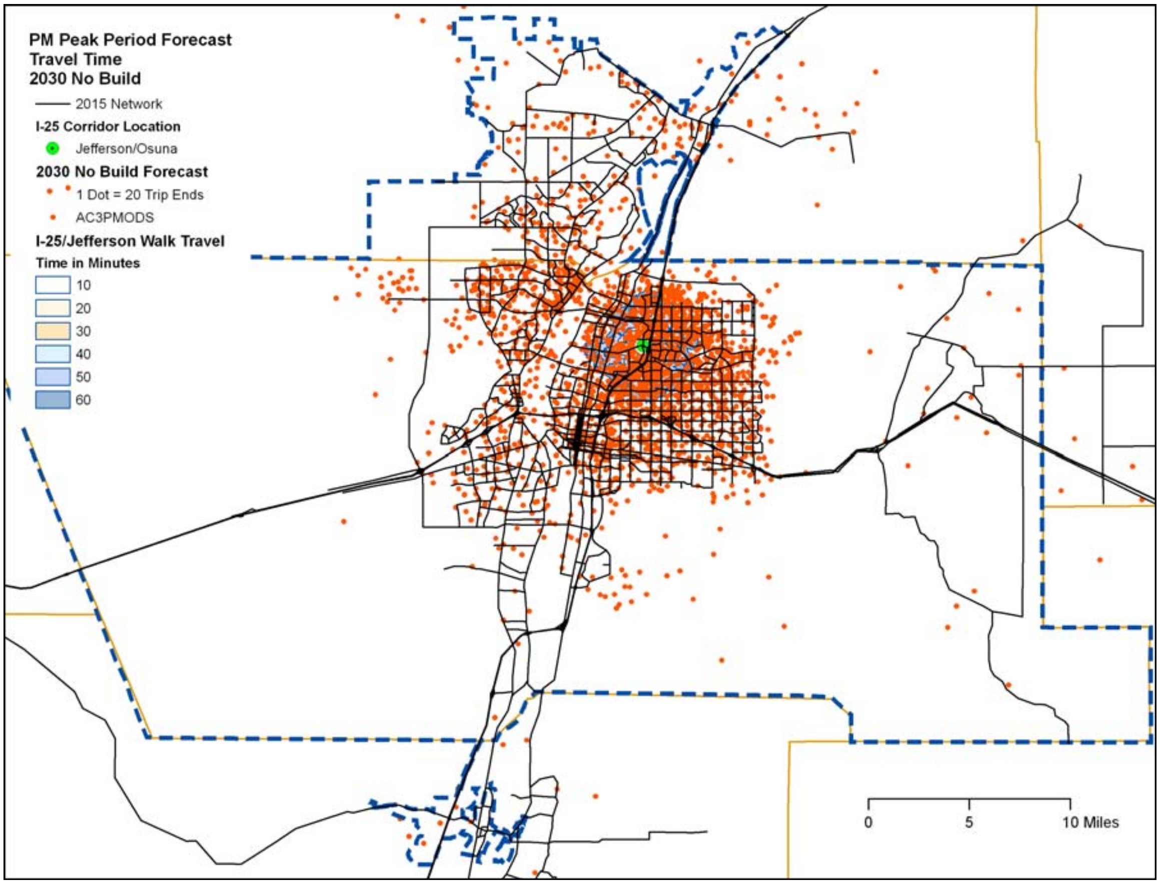
Map III-11 – Auto travel time contours with Origin and Destination (O/D) data for I-25/Jefferson Activity Center.

Walk Mode (**Maps III-12** and **III-13** below):

- Walking is a more local mode of transportation. Most people walk for a short distance or a short limit of time.
- As expected, the shape of the travel time contours for the walking analysis is very uniform. The analysis does not take into account the quality of the walking environment or the surroundings. It looks at whether walking is allowed or not because a walking facility has been coded.
- A more comprehensive analysis of walking in the AMPA is presented in the 2030 MTP pedestrian element. The Pedestrian Composite Index is a more comprehensive tool to evaluate walking conditions and qualify potential markets for the activity.
- Table 1 of this section presents how much of the PM peak period trips are captured by the travel time contours as well as how much those trips represent the total trips associated with the Jefferson/I-25 activity center.



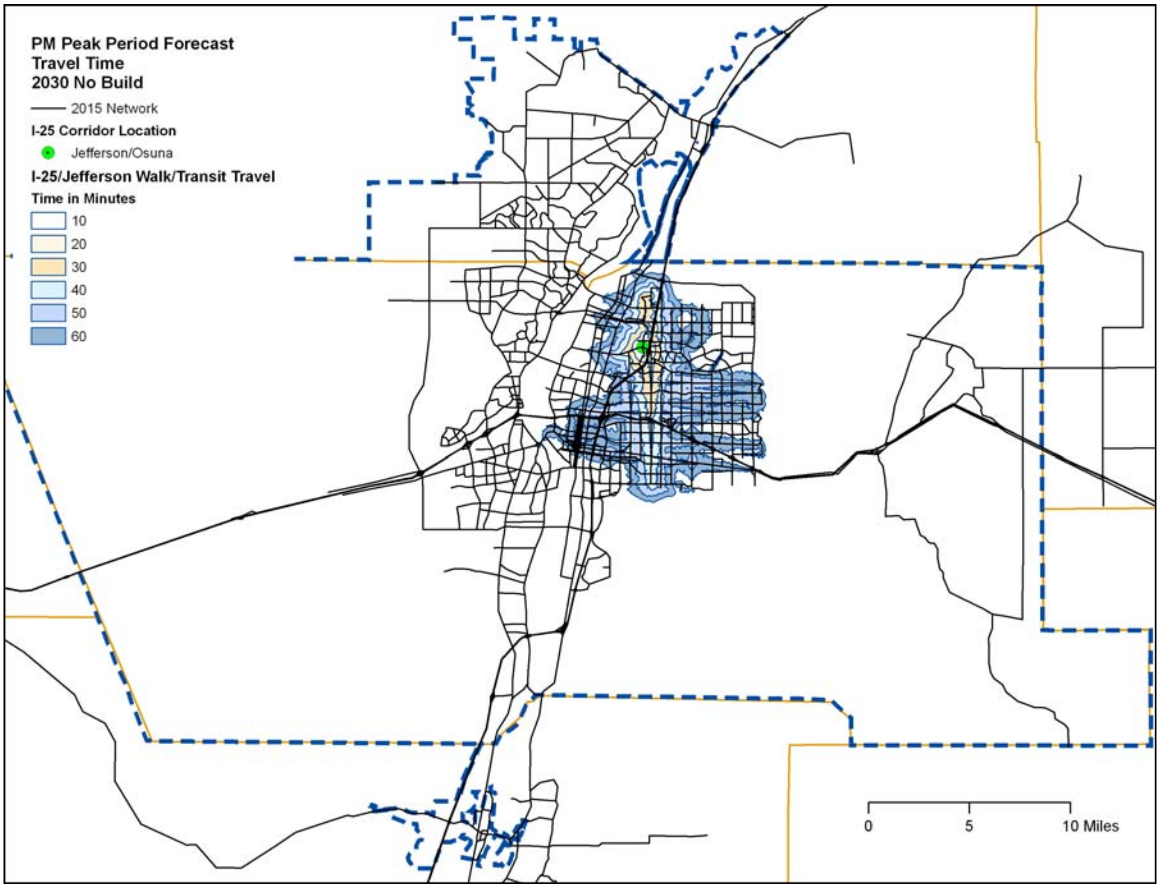
Map III-12 – Walk travel time contours for I-25/Jefferson Activity Center.



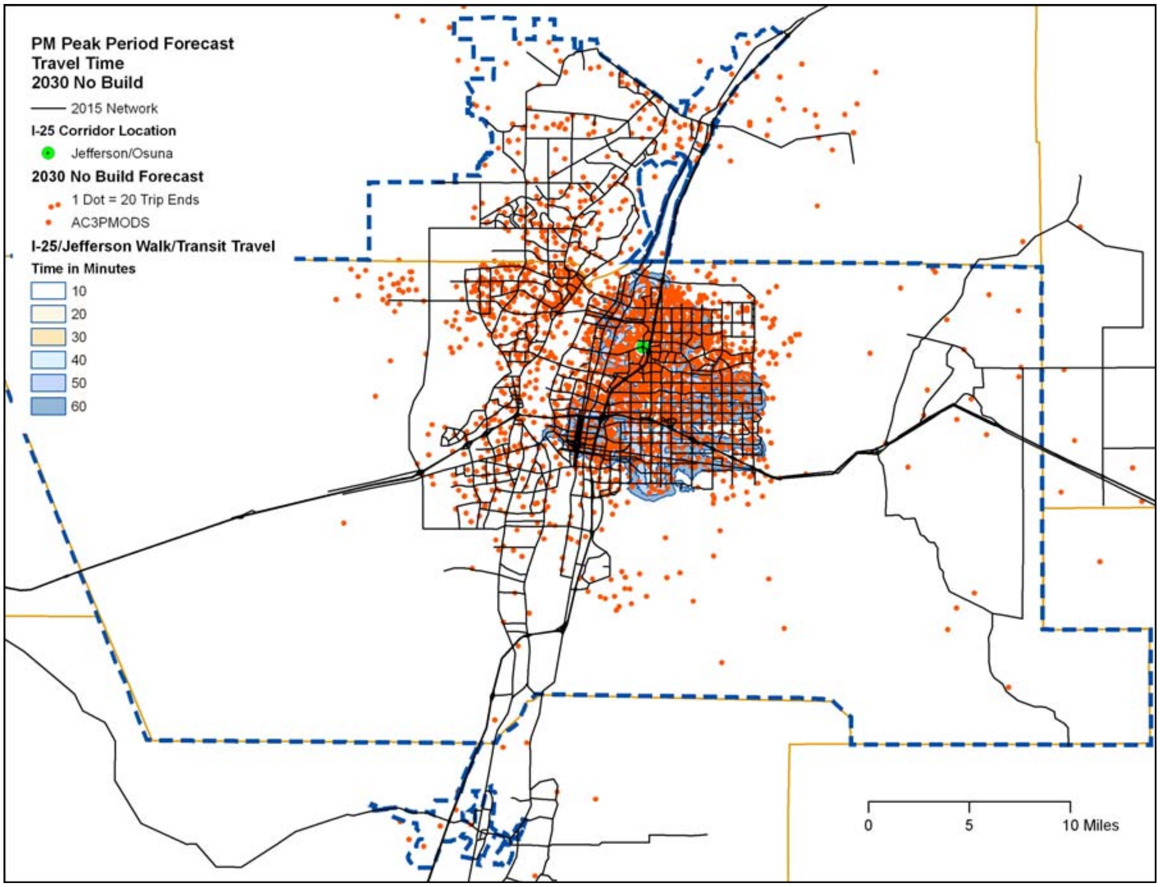
Map III-13 - Walk travel time contours with Origin and Destination (O/D) data for I-25/Jefferson Activity Center.

Walk to/from Transit (**Maps III-14** and **III-15** below):

- The travel time contours show the capacity of the transit service to meet the trip market associated with this activity center given the information available. The analysis took into consideration the headway for each transit route. The travel time is based on the bus running as the speed of the traffic flow.
- The travel time contours expand primarily north to south along the Jefferson corridors and then along San Mateo Blvd. This is the alignment served by routes 151, 140, and 141.
- There a good connections to bus routes on Montgomery Blvd. (route 5), Comanche Rd. (route 13), and Menaul Blvd. (route 8).
- Downtown Albuquerque can be reached in approximately 50 minutes when connecting to the Rapid Ride service, and in about 60 minutes when connecting to other bus services.
- Connections to the Albuquerque Westside are limited given the time threshold used for the analysis (up to 60 minutes). To reach this area will take more than 60 minutes given the information coded in the TRAM model at the time.



Map III-14 - Walk to/from Transit - Travel time contours for I-25/Jefferson Activity Center.



Map III-15 - Walk to/from Transit - Travel time contours with Origin and Destination (O/D) data for I-25/Jefferson Activity Center.

Table III-4: Activity Center Travel Market Analysis*

		KAFB/Sandia Labs/Lovelace		I-25/Jefferson		Downtown/St. Joseph		Midtown		UNM/Presbyterian Hospital	
Mode of Transp.	Travel Time Interval (minutes)	Cumulative PM Peak Period Trips	Cumulative Interval share of Market Demand	Cumulative PM Peak Period Trips	Cumulative Interval share of Market Demand	Cumulative PM Peak Period Trips	Cumulative Interval share of Market Demand	Cumulative PM Peak Period Trips	Cumulative Interval share of Market Demand	Cumulative PM Peak Period Trips	Cumulative Interval share of Market Demand
Walk	10	110.25	0.49	350.88	0.67	382.05	2.41	113.76	0.37	286.18	0.86
	20	603.89	2.66	1929.02	3.71	1083.66	6.84	580.46	1.88	1188.19	3.56
	30	1259.45	5.55	4148.94	7.98	1743.12	11	1507.18	4.88	2680.97	8.02
	40	1780	7.84	6889.46	13.25	2480.35	15.65	3212.57	10.41	4266.84	12.77
	50	2479.38	10.92	9883.72	19.01	3313.75	20.91	5180.99	16.79	5667.51	16.97
	60	3407.44	15.01	12891.85	24.8	3999.27	25.23	6777.33	21.96	7065.15	21.15
Total		9640.41		36093.87		13002.2		17372.29		21154.84	
Bicycle	10	680.33	3	2722.37	5.24	801.44	5.06	745.21	2.41	1170.82	3.51
	20	1831.65	8.07	8773.58	16.88	2144.51	13.53	4233.72	13.72	4232.74	12.67
	30	3829.5	16.87	16156.65	31.08	3908.23	24.66	8368.37	27.11	7487.04	22.42
	40	6335.82	27.9	23208.3	44.64	5552.75	35.04	12975.37	42.04	10521.39	31.5
	50	8886.77	39.14	29133.17	56.04	7288.98	45.99	16883.83	54.71	14018.14	41.97
	60	11416.33	50.28	34467.23	66.3	9136.42	57.65	20136.7	65.25	17028.24	50.98
Total		32980.4		114461.3		28832.33		63343.2		54458.37	
Walk/Transit	10	95.04	0.42	360.67	0.69	318.89	2.01	113.76	0.37	309.25	0.93
	20	402.67	1.77	1950.52	3.75	766.58	4.84	580.46	1.88	2243.93	6.72
	30	1710.7	7.53	5947.14	11.44	1431.48	9.03	1455.67	4.72	4887.36	14.63
	40	4181.89	18.42	9926.9	19.09	2757.5	17.4	3044.33	9.86	8012.74	23.99
	50	7563.3	33.31	16967.65	32.64	4894.15	30.88	5738.86	18.59	12503.85	37.44
	60	13953.6	47.89	25911.64	49.84	7210.58	45.5	9657.51	31.29	17375.69	52.02
Total		27907.2		61064.52		17379.18		20590.59		45332.82	
Auto	10	6695.39	29.49	20000.33	38.47	6065.94	38.27	12417.83	40.24	12164.98	36.42
	20	14530.51	64.0	35643.22	68.56	11730.17	74.01	21638.28	70.11	22600.29	67.66
	30	17314.61	76.26	40789.35	78.46	13327.22	84.09	25339.92	82.11	26378.42	78.98
	40	19190.32	84.52	43622.02	83.9	13976.71	88.19	26794.71	86.82	27919.91	83.59
	50	20104.78	88.55	46211.36	88.88	14681.01	92.63	28280.23	91.63	29649.75	88.77
	60	77835.61	93.35	48905.54	94.07	15155.38	95.62	29362.21	95.14	31165.13	93.31
Total		155671.22		235171.82		74936.43		143833.18		149878.48	

* Analysis based on anticipated 2030 socioeconomic data with 2015 transportation infrastructure.